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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/701,254      | 11/27/2000  | Norio Nagatsuka      | SON-1684/KOI        | 7973             |

7590 04/10/2003

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EXAMINER

MARC, MCDIEUNEL

ART UNIT

PAPER NUMBER

3661

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                            |                  |   |
|------------------------------|----------------------------|------------------|---|
| <b>Office Action Summary</b> | Application No.            | Applicant(s)     | J |
|                              | 09/701,254                 | NAGATSUKA ET AL. |   |
|                              | Examiner<br>McDieunel Marc | Art Unit<br>3661 |   |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 03/25/2003.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-140 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 95-104 is/are allowed.
- 6) Claim(s) 1, 3, 9, 13, 15, 23, 25, 33, 35, 41, 45, 47, 55, 57, 65-67, 69, 70, 72-74, 76, 78-82, 84, 87, 88, 90 and 91 is/are rejected.
- 7) Claim(s) 2, 4-8, 10-12, 14, 16-22, 24, 26-32, 34, 36-40, 42-44, 46, 48-54, 56, 58-64, 68, 71, 75, 77, 83, 85, 86, 89 and 92-94 is/are objected to.
- 8) Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

- a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

- |  |  |
|--|--|
| 15) <input type="checkbox"/> Notice of References Cited (PTO-892)                              | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)          | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 20) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

1. This is in response to a letter for patent filed on November 27<sup>th</sup>, 2000, in which claims 1-104 have been elected for examination.
2. The restriction to claims 13-53, 45-54, 72-77 and 87-89 of group I and 23-32, 55-63, 78-83 and 90-92 of group II is withdrawn.
3. Acknowledgment is made of the claim for priority under **35 U.S.C. 119(a)-(d)**.
4. The rejection to claims 2, 4, 12, 14, 24, 34, 36, 46, 54, 68, 70, 75 and 81 **under 35 U.S.C. 112, second paragraph** regarding the term “living body” in the claims is maintained, because the phrases “living body” and “acts naturally like a living body,” are totally different.
5. The rejection to claims 1, 15-11, 46, 56, 65-67, 71, and 84-86 under **35 U.S.C. 102(a)** as being anticipated by **Breazeal et al.** is withdrawn due to amendment filed on 03/25/2003.

6. Claims are replete with the phrase “adapted for”. The phrase “adapted for” suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. Therefore, the clause “adapted for” should not be used as claim language. Appropriate correction is required.

Dependent claims not specifically rejected are rejected as being dependent upon a rejected base claim.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims are rejected under **35 U.S.C. 102(b)** as being clearly anticipated by **Hara et al.** (“**Real-time Facial Interaction between Human and 3D Face Robot Agent**”, 1996).

As per claims **1, 13, 23, 33, 45, 55, 65, 72, 78, 84, 87, 90 and 93** **Hara et al.** teaches a robot device comprising (see Photos 1-3 below):

an emotion module in which a plurality of emotion units representing various emotions affect one another to output an emotion (see Fig. 5 and Table 2 below); and

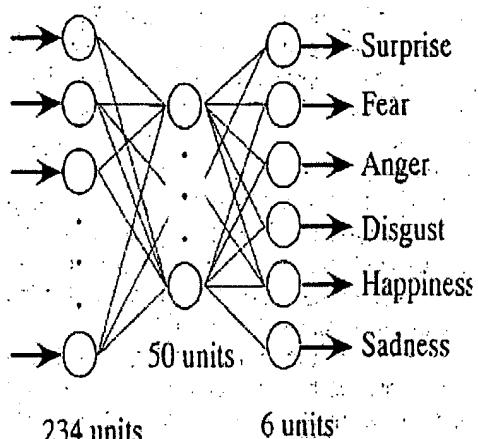


Fig.5 Structure of neural network

Table 2 Recognition result  
 training information: 15M

| Facial expression | Recognized result |      |      |      |      |      |
|-------------------|-------------------|------|------|------|------|------|
|                   | Sur.              | Fear | Dis. | Ang. | Hap. | Sad. |
| Sur.              | 90                | 10   | 0    | 0    | 0    | 0    |
| Fear              | 10                | 90   | 0    | 0    | 0    | 0    |
| Dis.              | 0                 | 0    | 50   | 40   | 0    | 0    |
| Ang.              | 0                 | 10   | 10   | 80   | 0    | 0    |
| Hap.              | 0                 | 0    | 0    | 0    | 100  | 0    |
| Sad.              | 0                 | 10   | 0    | 0    | 0    | 90   |

average : 85.0%

action means for acting on the basis of the emotion outputted by the emotion module (see Photos 2 and 3);

Hara et al. further teaches a robot device comprising (see Photos 1-3):

an emotion module in which a plurality of emotion units representing emotion output individual emotions (see Photos 2 and 3 below);

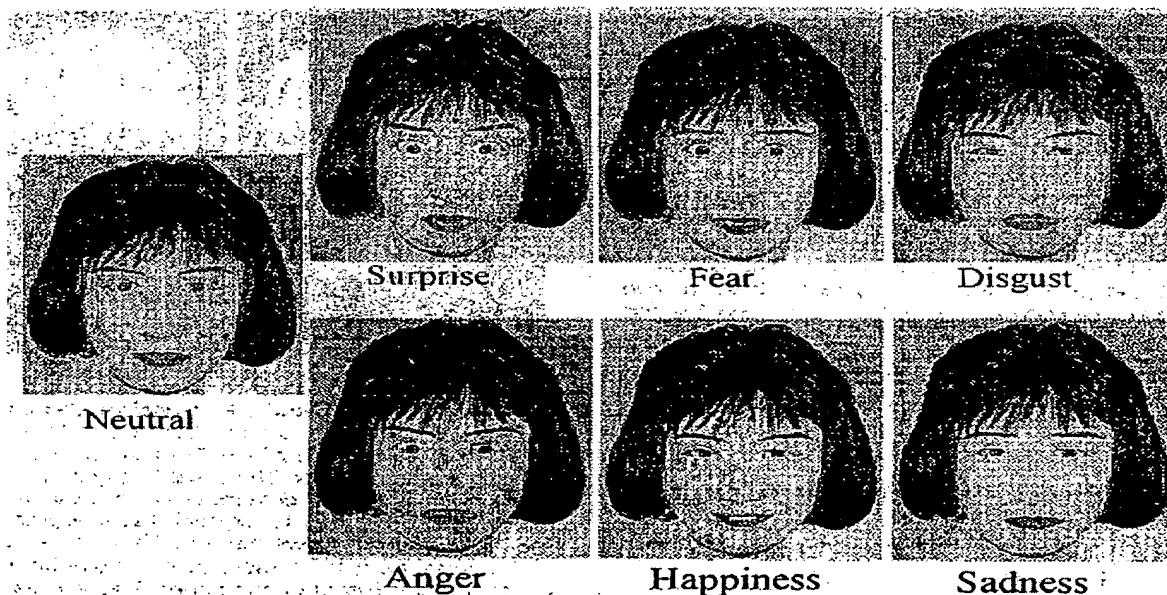


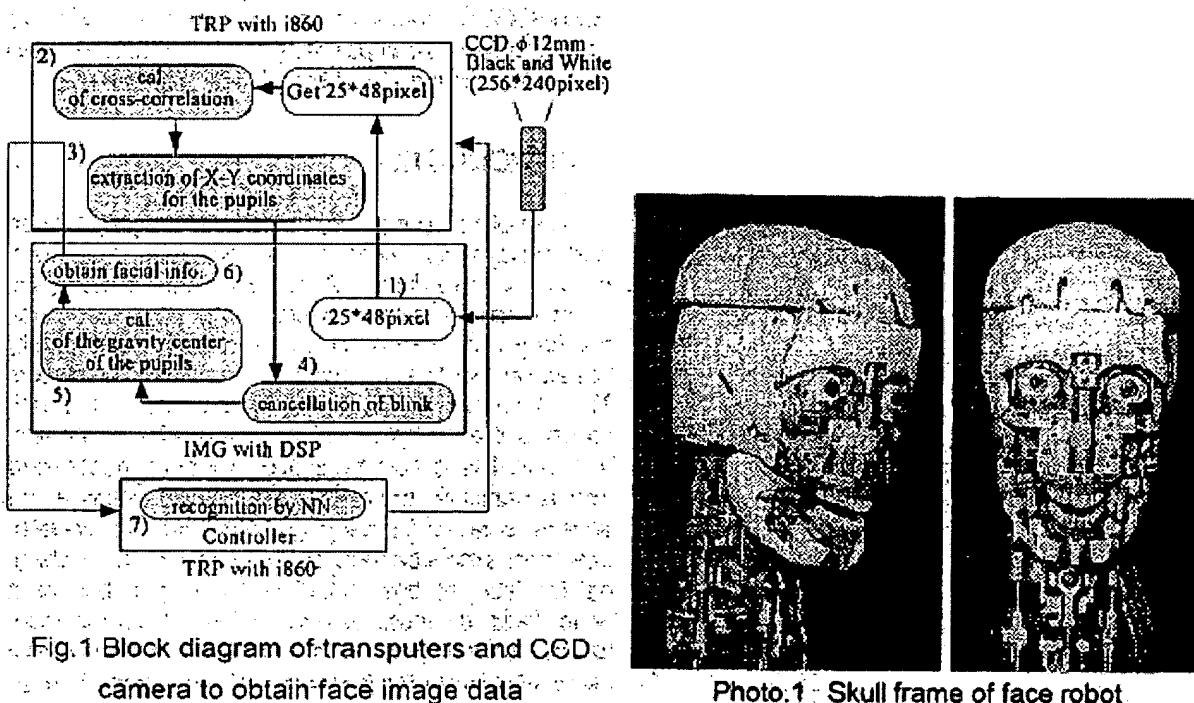
Photo.2 Neutral and 6 typical facial expressions expressed by face robot ( FMA actuators used )

an instinct module in which a plurality of instinct units representing instincts outputs individual instincts (see Photo 3 and page 402, col. 1, section 2. *ACTIVE HUMAN INTERFACE*, lines 12-16); and

action means for acting on the basis of the emotion outputted by the emotion module and the instruct outputted by the instinct module (see Photos 2 and 3);

**Hara et al.** also teaches a robot device comprising (see Photos 1-3):

detection means for detecting a stimulus applied from outside (see Fig. 1, particularly the CCD);



storage means for storing the record of information related to the stimulus (see page 404,

Fig. 5 and col. 1, 2<sup>nd</sup> paragraph);

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response processing decision means for deciding response processing on the basis of the stimulus detected by the detection means (see Fig. 1 and Photo 3); and



**Photo 3 Facial reaction of Face Robot to the human facial expression**

wherein the response processing decision means decides the response processing on the basis of the record information stored in the storage means (see page 402, col. 2, Fig. 1 and page 404, col. 1, 2<sup>nd</sup> paragraph).

As per claims **3, 15, 25, 35, 47, 57, 67, 69, 74, 76, 80, 82 and 82**, Hara et al. teaches a robot device as treated above wherein the emotion units are designed by an object-oriented design (see Fig. 5).

As per claims **9, 41, 66, 73, 76, 79, 82 and 93**, Hara et al. teaches a robot device wherein Hara's *et al.* camera capture/receive and send/transmit/notify emotion input received from the outside from a user/human/caregiver to the robot's emotion module thereby receiving an output facial expression accordingly (see Photos 1-3 and sections *2. to 5.*).

***Allowable Subject Matter***

9. Claims **2, 4, 12, 14, 24, 34, 36, 46, 54, 68, 70, 75, 81 and 82** would be allowable if rewritten to overcome the rejection(s) under **35 U.S.C. 112**, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. Claims **95-104** are allowed.

11. Claims **2, 4-8, 10-12, 14, 16-22, 24, 26-32, 34, 36-40, 42-44, 46, 48-54, 56, 58-64, 68, 71, 75, 77, 83, 85, 86,~~89~~ and 92-94** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims.

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

\*\*\* The prior arts cited in PTO-Form 892 with the exclusion of (Hara *et al.*) disclose pertinent information related to the claimed invention. Applicants are requested to consider the prior art reference for relevant teachings when responding to this office action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to McDieunel Marc whose telephone number is (703) 305-4478. The examiner can normally be reached on 6:30-5:00 Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Cuchlinski, Jr. can be reached on (703) 308-3873. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7687 for regular communications and (703) 305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

  
McDieunel Marc

April 9, 2003

MM/